

***Guest Lecture***  
***on***  
**“CONDITIONAL MONITORING OF MODERN MACHINE TOOLS - A JOURNEY TOWARDS INDUSTRY 4.0”**  
**2<sup>nd</sup> February, 2019**

Blade vibration and blade clearance are effective diagnostic features for the identification of blade damage in rotating machines. Blade tip-timing (BTT) is a non-contact method that is often used to monitor the vibration and clearance of blades in rotating machineries. With this objective, a guest lecture on “Conditional Monitoring of Modern Machine Tools - A Journey towards Industry 4.0” was organized in the department on 2<sup>nd</sup> February, 2019. Dr. Prakash Rajendran, Ph.D(IIT-M), Postdoc (Texas A & M University), Senior Assistant Professor, School of Mechanical Engineering, SASTRA Deemed University, Thanjavur, Tamil Nadu, was the resource person. The program started with the felicitation to the speaker Dr. Prakash Rajendran.



***Felicitation to Dr. R. Prakash, Sr. Asst. Professor, SASTRA Deemed University, Thanjavur, by the HOD (ME), Dr. S. Ragu Nathan & Dr. J. S. Binoj***



***Welcome address by Dr. K. C. Varaprasad, Prof. & Head, Dept. of M.E***

During the inaugural session, Dr.K.C.Varaprasad, Professor &Head, Department of Mechanical Engineering enlightened the students with 'Industry 4.0' the current trend of automation and data exchange in manufacturing technologies, which includes cyber-physical systems, the Internet of things, cloud computing and cognitive computing and is commonly known as fourth industrial revolution. After the inaugural session, Dr. R. Prakash presented a lecture on "Vibration based damage in beam and plates" in which he described about the introduction to vibration and gas turbine and failures in gas turbine blades to make the undergraduate students better understanding of blade vibration, clearance, damage and their operating principles.

Moreover, Dr. R. Prakash emphasized the need of analyzing the blade damage in rotating machines and to gain knowledge on measurements in rotating blades using different sensors. Finally, Dr. R. Prakash concluded with exploring the awareness on predicting the presence and locations of damages caused by vibration in rotating blades.



***Dr. R. Prakash, Sr. Asst. Professor, SASTRA Deemed University, Thanjavur, delivering the expert talk***

In the next session, Dr. R. Prakash discussed on the basic design principles, analyzing, challenges and applications of the vibrations, which can help students to choose their career accordingly. Also he explained the aspects related to the Wavelet Packet Transform, vibrational based damages in the rotating equipment's and informed the students on connection of basics with real life applications (Vibrational Damages) in machineries.

In addition, the expert Dr. R. Prakash made awareness among the students on blade vibration, blade clearance, and blade damages. He also emphasized on the challenges and opportunities available in the field of rotating machines and insisted the students to appear for the various competitive exams. Moreover, Dr. R. Prakash advised the students to select their master degree program in the challenging area and pursue them in the national or international reputed Institutions/Universities.

Later, in the department Dr. R. Prakash had an interactive session with the students during which Dr. R. Prakash clarified the questions raised by the students. Also, he sanctified the students and recommended to shape their profession in the right path for sustaining in the modest world. Finally, a research deliberation with the faculty was conducted in which the expert emphasized the importance of research and insisted the faculties to pursue research focusing on the future trend in their subject specialization.